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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/363,121	07/28/1999	BONG-WOO LEE	35399/DBP/Y3	7750

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CHRISTIE PARKER & HALE LLP  
P O BOX 7068  
PASADENA, CA 911097068

EXAMINER

HAYNES, MACK NELSON

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 07/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/363,121

Applicant(s)

LEE, BONG-WOO2

Examiner

Mack N. Haynes

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Response to Amendment*

Applicants' amendment, filed 3/26/02, has been entered.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuneta et al. (3,806,750) in view of Jang (5,366,758) and Kim (5,998,920).

With regards to claims 1-2, Figs. 1 and 3 as well as col. 2, line 23-col. 4, line 10 of Tsuneta et al. disclose a CRT that comprises the following: a panel (14 of Figs. 1 and 3) having a phosphor screen (15 of Fig. 3); a cylindrical neck (12 of Fig. 1) having an electron gun assembly (17 of Fig. 3) disposed therein; a funnel (13 of Fig. 1) that is formed between the panel and neck, and having a rectangular cone portion contiguous to the neck, wherein the substantially rectangular cone portion having rounded inside corners tangentially joining adjacent cone walls of the rectangular cone portion (See Figs. 5 and 6, which illustrate the cone portion having rounded inside corners); and an inherent anode button.

Yet, Tsuneta et al. does not specifically discuss the concept of having an inner graphite layer that is disposed on an inner surface of the funnel to form a path for transmission of the voltage, wherein the inner graphite layer satisfies the following condition:  $0.9 < T_d / T_h < 1.36$  (for claim 1) or  $0.9 < T_d / T_v < 1.36$  (for claim 2), where  $T_d$  is an approximate thickness of the inner graphite layer on each inside corner of the cone portion,  $T_h$  is an approximate thickness of the inner graphite layer disposed on inside horizontal walls of the cone portion, and  $T_v$  is an approximate thickness of the inner graphite layer disposed on inside vertical walls of the cone portion.

However, col. 1, lines 8-37 and col. 3, lines 1-6 of Jang discloses a CRT having a funnel with a graphite coating that is covered uniformly (wherein, the thickness ratios would be equal to "1", which is within the range claimed by the applicants) over the inner surface of the funnel for the purpose of providing the CRT with an inner conductive film between the screen portion and the electron gun; thus, enabling a high voltage to be applied through the conductive film in order to accelerate the electron beams to the screen from the electron gun.

More over, col. 2, lines 38-53 of Kim teaches that it would be desirable to have a graphite coating spread uniformly over the inner surface of a CRT for the purpose of insuring that the high voltage flows uniformly across the inside surface of the funnel and prevent any unwanted internal discharging.

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to uniformly (wherein, the thickness of the coating at the corners is equal to the thickness of the coating on the vertical and horizontal walls) coat

the inner surface of the funnel of Tsuneta et al., which includes the corners as well as vertical and horizontal walls for the purpose of providing the CRT of Tsuneta et al. with an inner conductive film from the electron gun to the screen portion which enables a high voltage to be applied uniformly across the funnel and accelerates the electron beams from the electron gun to the screen as taught by Jang and Kim.

### ***Response to Arguments***

Applicant's arguments filed 3/26/02 have been fully considered but they are not persuasive.

With regards to the applicants' arguments on pgs. 3-5 of the Remarks section, the applicants contend that the secondary teaching references Jang and Kim "focus" on coating the surfaces of the funnel portion of a CRT with a graphite layer and not the junctions or corners of the funnel; consequently, the applicants contend that Tsuneta et al. in view of Jang and Kim deal with CRT tube surface coatings and do not deal with coating the corner junctions.

While the applicants contend that the above cited prior art does not deal with coating the graphite layer at the corners, the examiner respectfully disagrees. More specifically, the examiner asserts that Jang (col. 3, lines 1-6) teach coating uniformly the entire inner surface of the funnel, which inherently includes the corner junctions, with a graphite layer. More over, as explained in the above rejection, it would be desirable to have a graphite coating spread uniformly over the inner surface of a CRT for the purpose of insuring that the high voltage flows uniformly across the inside surface of the funnel and prevent any unwanted internal discharging.

While the applicants contend on pgs. 4-5 in the Remarks section that coating the corners is not a trivial engineering concern and gives an illustrative example to support their contentions, the examiner holds that the example the applicants utilize is irrelevant because the corners of the Tsuneta et al. are rounded and not straight edged like the applicants' example; thus, the issues with respects to the different or non-uniform thicknesses at the inside corner of the graphite layer as compared to the short and long sides of the funnel raised by the applicants do not apply to the Tsuneta et al. since the corners are rounded.

Furthermore, it should be noted that since the applicants' claims and specification include the possibility of a uniform graphite coating thickness at the corners and long and short sides of the funnel (as evidenced by the fact that  $T_d/T_h$  or  $T_d/t_v$  could be equal to "1" which would fall within the applicants' claimed range); the applicants have affirmed that it is possible to successfully have a graphite coating of uniform thickness on the inside surface, including the corner junctions, of the funnel. If the applicants' arguments (pg. 4, last paragraph) are suggesting that it is not possible to have a uniform thickness throughout the inner surface of the funnel (including the corner junctions as compared to the long and short sides of the funnels), then the applicants would have incorporated a possible thickness ratio of the graphite coating at the corners and long and short sides that would cause the CRT to function undesirably and contrary to the applicants' disclosure; thus, the applicants' arguments would contradict the applicants' disclosure. The examiner respectfully contends that it is not the applicants' intentions to contradict their disclosure (i.e., the claims and specification); therefore, the

examiner contends that it is possible to have a graphite coating of uniform thickness on the corner junctions and long and short sides of the funnel; and that it would be obvious to one of ordinary skill in the art at the time the invention was made in view of Tsuneta et al. and Jang and Kim to produce a CRT that includes a funnel with a graphite coating of uniform thickness at the corner junctions and long and short sides.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mack N. Haynes whose telephone number is (703) 308-5460. The examiner can normally be reached on Mon-Fri., 9:00a.m.-5:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

Application/Control Number: 09/363,121  
Art Unit: 2879

Page 7

308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



MNH  
June 26, 2002



MICHAEL H. DAY  
PRIMARY EXAMINER